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June 6, 2014

Ms. Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Modernizing the E-Rate Program (WC No. 13-184) -- Ex parte meeting

Dear Ms. Dortch:

On June 4, 2014, Hewlett-Packard Company (HP) met with Commission staff to discuss E-rate reform proposals in the above-referenced docket. HP was represented by undersigned counsel and by Greg Herbold, HP Director, US SLED Programs; Nancy Schwarz, HP Networking Program Manager– Education; Tom Williams, Software Defined Networking (SDN) Strategy & Deployment, HP Networking; and Deborah Krabbendam, Esquire of Conrad O'Brien, P.C. Commission staff attending the meeting included Michael Steffen, Office of Managing Director; Lisa Hone, Bryan Boyle, Soumitra Das, Kate Dumouchel, Charles Eberle and James Bachtell with the Wireline Competition Bureau, and Nick Alexander, Office of Strategic Planning and Policy Analysis.

First, HP reiterated its support for the Commission's E-rate Modernization efforts and, in particular, its commitment to fund internal connections. As the Commission has recognized, "the deployment of equipment inside school and library facilities is as essential to comprehensive broadband service at a given location as the high-speed connectivity to that facility." Public Notice, ¶ 6. Considerations that should drive reform are outlined in HP's comments filed in response to the Commission's Public Notice, and include the need to give at least equal priority to internal connections; provide flexibility, predictability and equitable funding to applicants; focus on technologies that will meet applicants' needs cost-effectively into the future (in Chairman Wheeler's words, "future-proof[]" the program); and streamline program administration and avoid introducing new complexities.

Second, HP shared information about networking technologies – specifically, unified wired/wireless networks and Software Defined Networking (SDN) – that are available to schools and libraries now and provide significant advances in flexibility, scalability and long-term cost effectiveness. A copy of HP's presentation slides is attached. Supporting these technologies through E-rate would further the Commission's goal of "future proofing" the program.

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Third, HP asked the Commission to clarify the E-rate gift and competitive bidding rules. Clarification of the rules with respect to legitimate research, development and marketing activities would assist schools and libraries in making informed decisions and choosing cost-effective solutions that meet their individualized needs, and would thereby further the Commission's desire to "encourage public-private partnerships to promote our proposed E-rate goals." Clarification of the rules with respect to charitable donations would "allow schools and libraries to take greater advantage of private philanthropy while still allowing the Commission to maintain appropriate control over E-rate expenditures and to prevent improper influence over E-rate service provider selections." Consistent with its filed NPRM comments, HP asks the Commission to:

1. Clarify the factors which would lead it to conclude that a charitable donation was inappropriate and consider adopting safeguards for donors and recipients.
2. Modify the E-rate gift rule to distinguish between gifts to individuals and gifts to entities, and, for gifts to entities, adopt a procedure and conditions similar to those the Commission has adopted to govern its own receipt of gifts from regulated entities (see 47 C.F.R. § 1.3000 et seq. (regulations applying to "gifts, donations and bequests made to the Commission itself")).
3. Establish a procedure and conditions to allow service providers to work with E-rate eligible entities to assess and meet their technology needs without violating the rules of fair and open competition.

HP also wants to use this opportunity to make two additional points. *First*, the Commission should explicitly identify Software Defined Network components as E-rate eligible. As demonstrated in detail in the presentation to the staff, SDN offers E-rate recipients tremendous cost savings, flexibility, and the capability to extend the life of previously purchased components. Consequently, the Commission should give schools and libraries the flexibility to spend smarter and more efficiently by purchasing SDN components. *Second*, the Commission should look closely at the timing for filing Form 470s. We urge the Commission to direct USAC not to open the Form 470 filing window until the details of program reform are set, since the Form 470 contains the criteria of the current program. It is HP's opinion that briefly delaying the usual timing of Form 470s until the rules and eligibility criteria are known will avoid uncertainty for program participants and for USAC, and is strongly preferable to issuing the forms in the next month with the changes not yet in place.

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Please direct any questions to the undersigned.

Sincerely,



Gerard J. Waldron

Counsel to Hewlett-Packard

cc: Mr. Nick Alexander
Mr. James Bachtell
Mr. Bryan Boyle
Mr. Soumitra Das
Ms. Kate Dumouchel
Mr. Chas Eberle
Ms. Lisa Hone
Mr. Michael Steffen

Attachment -- HP PowerPoint Presentation

Next Generation Technology Trends in Networking



Greg Herbold
Tom Williams
June 4, 2014



Legacy networks unable to meet today's demands

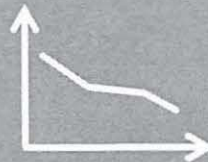
Network is not aligned to the requirements of schools



Costly manual configuration and management



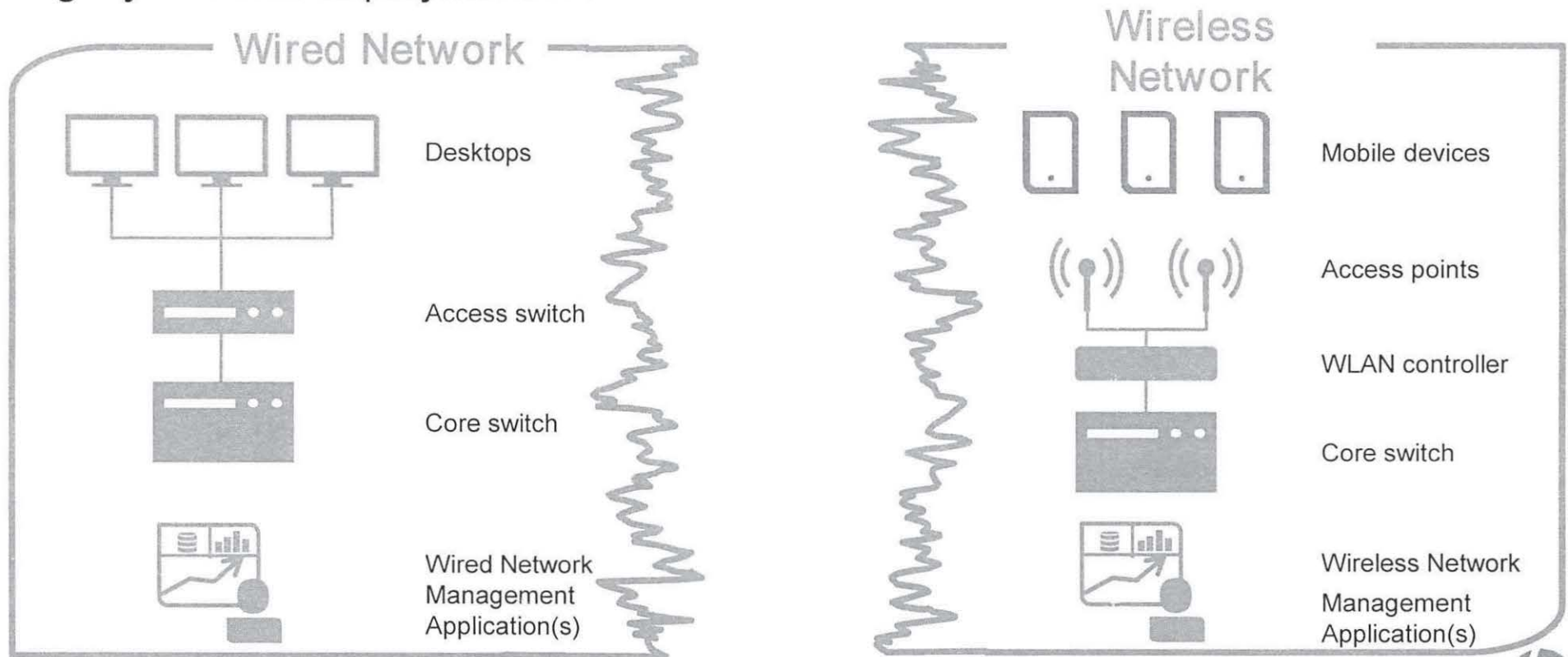
Limited IT resources



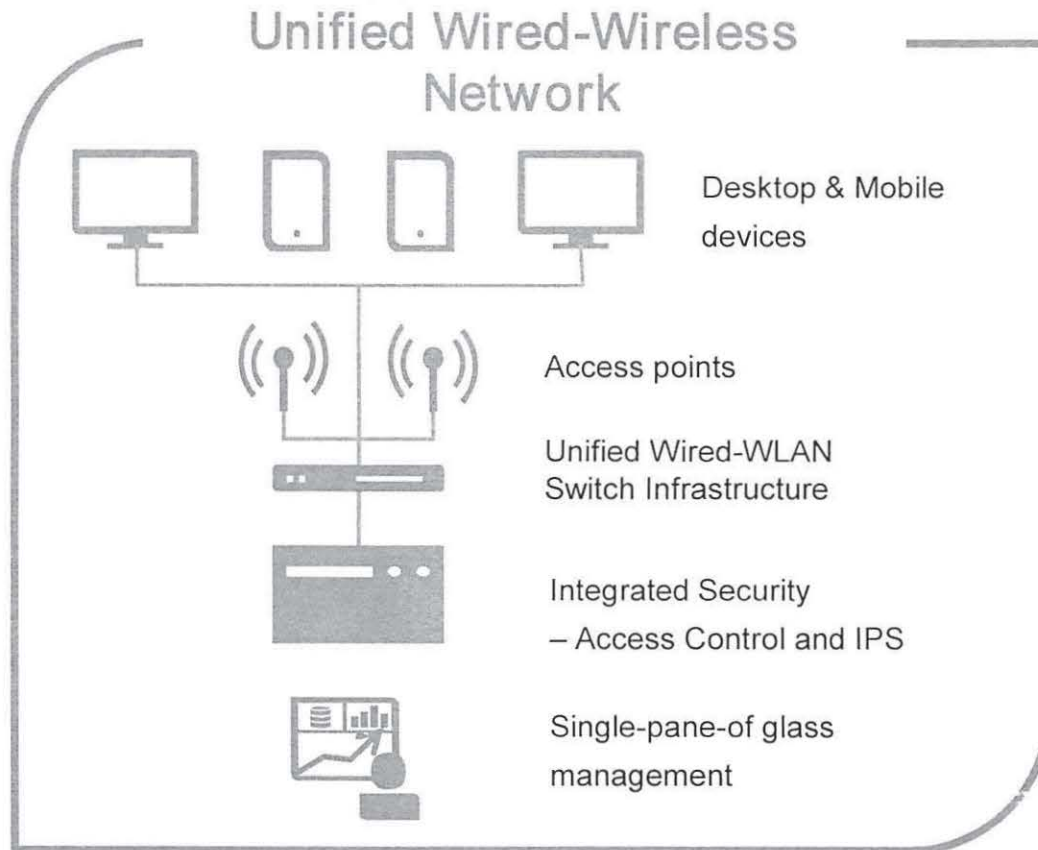
Poor application experience, unable to meet upcoming requirements

Separate Wired & Wireless Architectures & Networks

Legacy wireless deployment model



Unified Wired-Wireless access revolutionizes networks



Enhanced scalability and performance

- Comprehensive, unified portfolio of high-performing wired and wireless access solutions

Unified access

- Single pane-of-glass management from edge to core

Optimized connectivity

- 1- and 2-tier networks reduce latency and increase resiliency
- Optimized WLAN architecture reduces latency & traffic bottlenecks

Robust security

- Industry-leading research powers best-in-class threat protection
- Comprehensive identity management and endpoint security

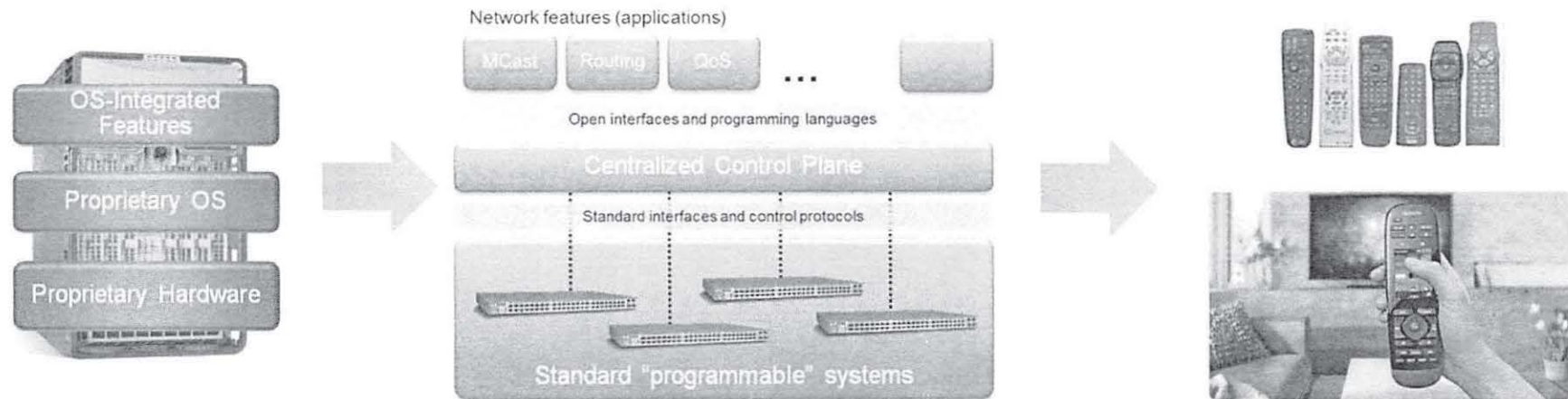




Embrace SDN – the Future of Networking is *Here*

SDN – A New Style of Network Control

Customer-Focused & Market Right-Sizing



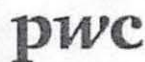
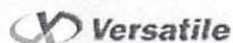
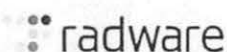
- Protectionist Business Model
- Vendor-Chosen Interoperability
- All-In-One Compromise
- Normalize "Pools of Excellence"
- Loss of Customer Leverage

- Market Driven Business Model
- Standards-Compliant Interoperability
- Best-of-Breed & Value Innovation
- Vendor Selection Based Upon Capability
- Customer-Driven Requirements with Market Pricing

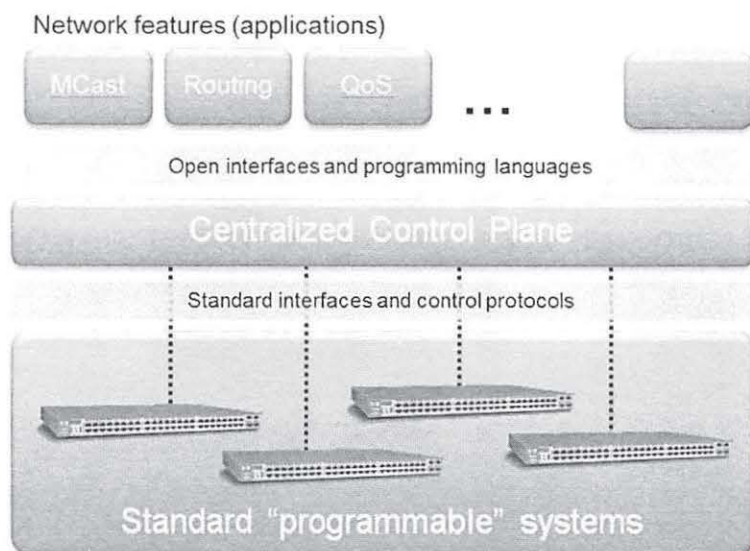
Open Network Forum - Open Ecosystem... Delivered

120+ Vendors To Date

Board Members



SDN – A New Style of Procurement & Operation



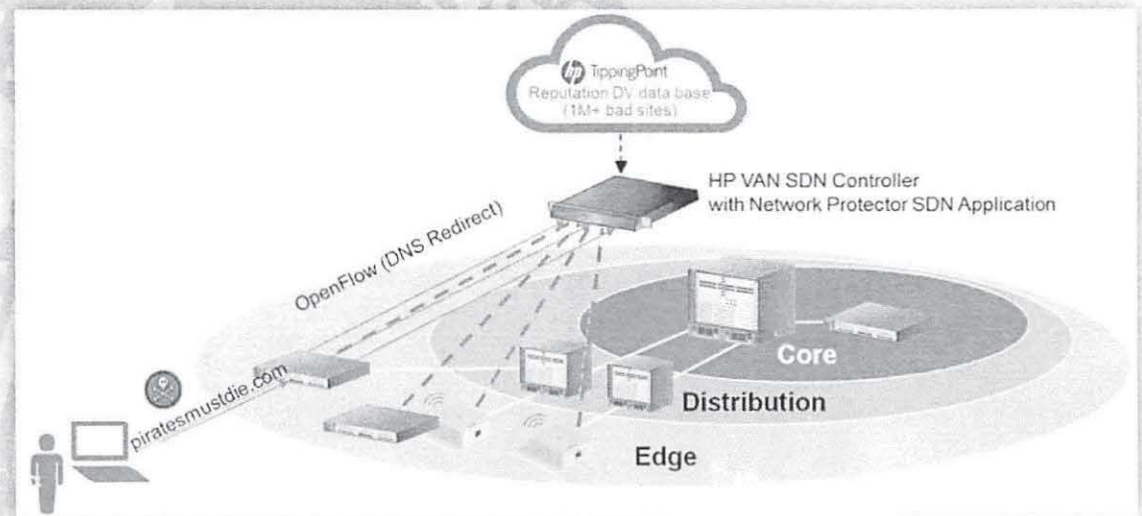
- **Cost Alignment**
 - Consortium/Aggregate Buying
- **Market Innovation**
 - White Labeling
- **Multi-Use & Repurposing**
 - CapEx and OpEx Scalabilities

SDN Stoplight Theory & Flow Concepts



- Single Intersection Programming = Single Network Element Programming
- More Efficiencies Gained with E911 Integration
- Types of Emergency Vehicle = Classes of Applications & Services
- Dynamic Reconfiguration of Throughput based upon Real-time Traffic

- Overlay vs Rip-and-Replace
- District-wide Policy via “Instances”
- Minimize Disruption / Self-Funding Policies
- Product Re-Usability



SLED SDN Use Cases

- K-12 school (Victoria, Australia)
- 250 faculty, 1,400 students (>200 students in boarding houses)
- Installed antivirus software in school-owned machines
- Installed intrusion prevention in the firewall
- IT team was still bogged down with hours of manually identifying and eliminating network threats (botnets, spyware, and malware)



“HP Network Protector SDN Application takes away a lot of the manual labor that we used to do. We now know exactly where the infections are and how many there are—we can detect threats and respond in a proactive manner. That saves us hours of work every week.”

– Gregory Bell, Head of Technical Services, Ballarat Grammar

Side Benefit:

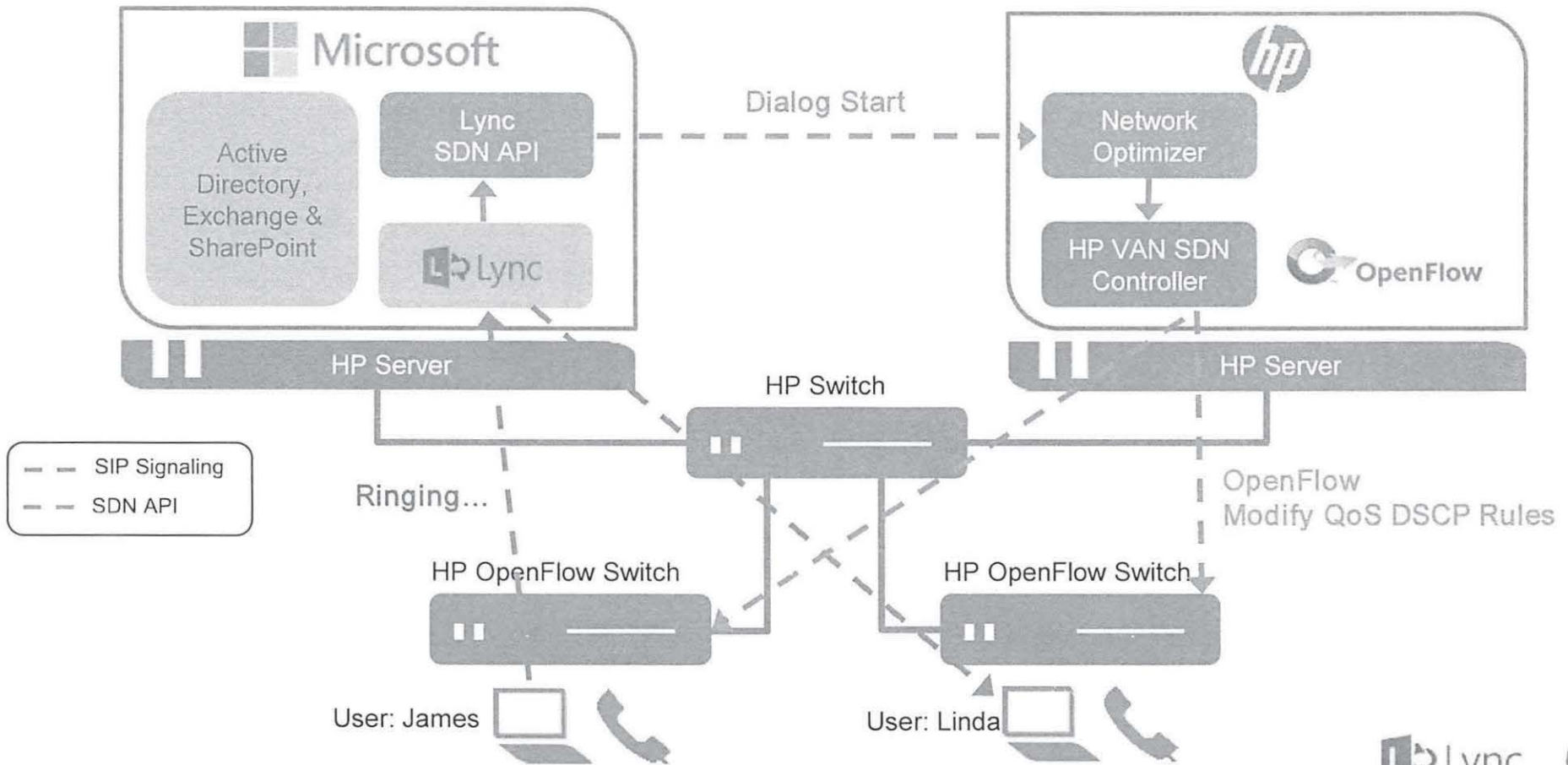
“We use Network Protector to help us with challenges around sites like Facebook, which are a distraction during class. With the DNS Blacklist feature, we restrict access to websites like that, which encourages the staff and students to engage more with one another during class.”



Video #1



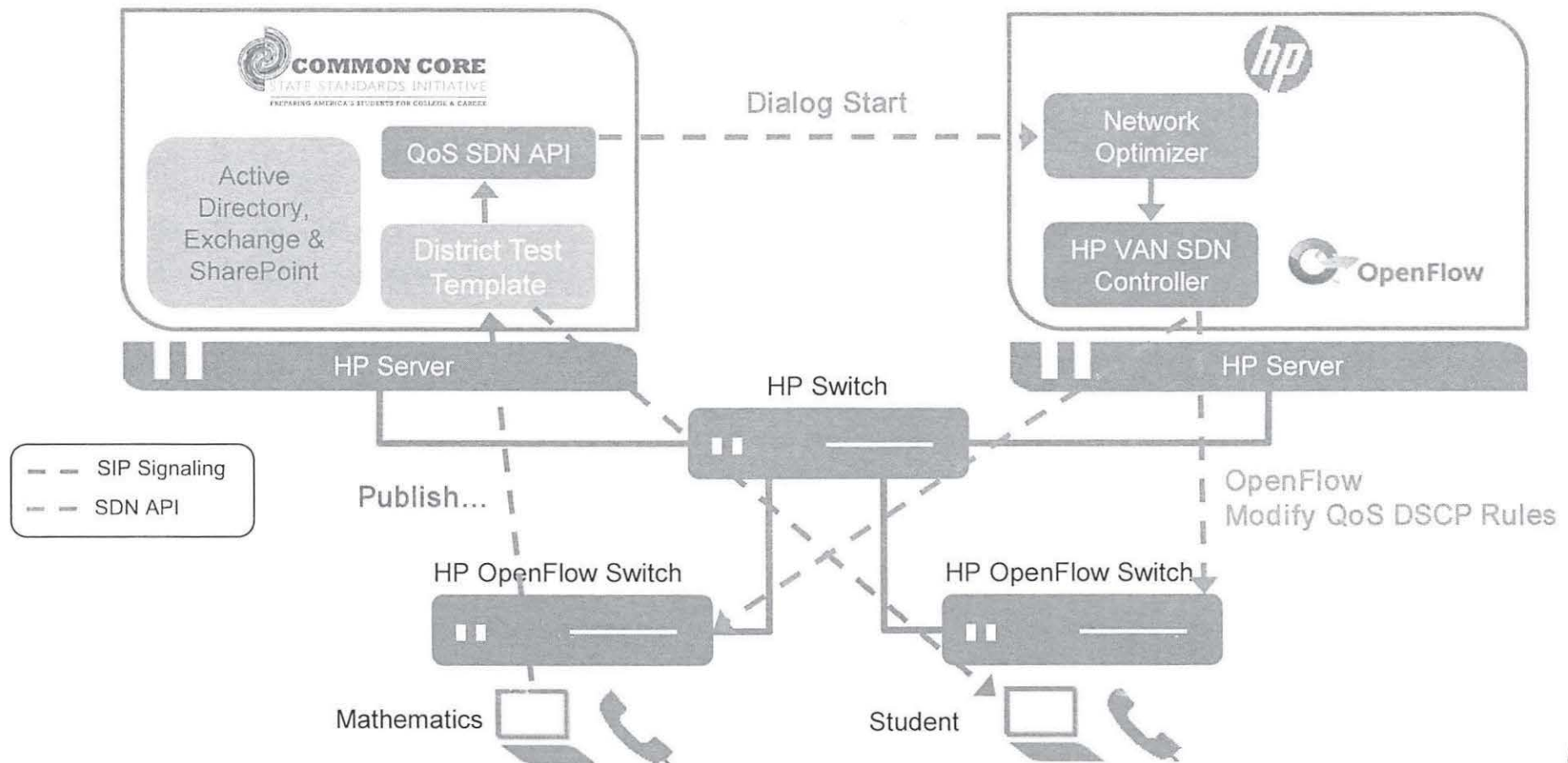
Network Application Deployment - Microsoft Lync Model



Video #2



Applying Model to Common Core Application Deployment



SDN Benefits

Agility

Network Ability to Grow, Move and Adjust to Future Application Demands

Alignment

Network Resources Allocated by Pre-Defined Application Templates

Consistency

Network Configuration Changes Consistently Applied Through Templates

Open Standards

Best-of-Breed to Support Application Demands and Market Trends

Innovation

Open-ended Application Development Due to Unrealized Capabilities

Accessibility

Utilize Time-Tested Human Factors Deployment Techniques

**Make it Simple
Make it Matter
Make History**

Thank you



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